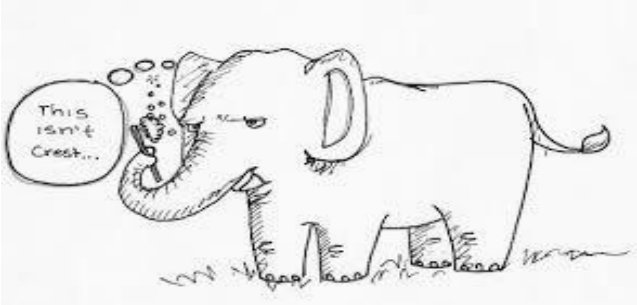
Elephant's Toothpaste

From Steve Spangler Science
(Because of the volume of foam produced, this is better as a demonstration)



KEY CONCEPTS/VOCABULARY (What you need to know)

- Chemistry is the science of changing things by mixing them or changing the temperature
- When we mix things, we can cause a chemical reaction
- Some reactions need a catalyst—that one special ingredient that will get the action started
- Yeast is a catalyst
- Catalyst: something that starts or speeds up a chemical reaction
- Exothermic: a chemical reaction that produces heat
- observation: something you saw, heard or noticed
- hypothesis: an educated guess as to what will happen in an experiment

QUESTION (What you want to learn and what to ask the children)

These questions should be asked in order so that children learn that a hypothesis is a guess about what will happen in the experiment. This expands their science vocabulary.

- What will happen if we add food coloring and soap to the jar? What is your hypothesis or guess?
- Will the soap bubble by itself or does it need to be mixed up?
- What will happen if we add yeast? What is your hypothesis or guess?

Fairfax County Public Library
12000 Government Center Parkway
Suite 324 Fairfax, VA 22035
703-324-3100
www.fairfaxcounty.gov/library

A Fairfax County Va., publication

To request this information in an alternate form contact the Early Literacy Outreach Office at 703-324-8413 or TTY 711.

May 2014

EXPERIMENT

Materials (What you need)

16oz soda bottle, tray, 20 volume hydrogen peroxide (a stronger solution that can be found at a beauty supply store), food coloring, blue Dawn dish detergent, funnel, measuring cup, small container, very warm water, yeast

Procedures (What to do)

- Tell the children that yeast are a catalyst—that they can cause or speed up a chemical reaction
- Ask the Questions and listen to their hypotheses
- Place soda bottle on tray and using a funnel, add ½ cup hydrogen peroxide
- Add a couple drops of food coloring and a squirt of Dawn
- In a separate container, dissolve 1 tsp of yeast into very warm water
- Using the funnel, add the yeast to the coke bottle and quickly remove the funnel
- Have the children feel the warm foam that results

CONCLUSION

Results (What happened?)

- The yeast causes the peroxide to release oxygen very quickly, forming lots of foam that overflows the bottle
- This reaction is exothermic—both the foam and the bottle will feel warm

Questions to Ask

- How does the foam feel?